

## **REMARKS**

The October 20, 2005 Office Action rejected the claims under §112 and § 103. The § 112 rejection was withdrawn in light of Amendment D, mailed December 22, 2005.

A Notice of Appeal was filed on December 27, 2005, with Amendment D. An RCE is being filed with this response, effectively withdrawing the notice of appeal.

Claims 1, 3, and 7 stand rejected under § 103 on the basis of Craven , Chen, and Linsey. Claims 2 and 9 stand rejected under § 103 on the basis of Craven, Chen and DeHaitre, and Claims 5-6 and 8 stand rejected under § 103 on the basis of Craven, Chen and case law. Applicants respectfully traverse these rejections for the reasons previously given, and request that the Examiner also consider the Declaration of Michael Tipps<sup>1</sup>, which provides objective evidence of non-obviousness, namely failure of others, unexpected results and commercial success.

The Tipps Declaration describes in detail why it is so difficult to design a screw that performs well in composite materials and the fundamental difference in how the present invention works over commercially available fasteners for composite materials. These remarks focus on the latter.

Whenever a fastener is installed in composite material, particularly without a pilot hole, remnant composite material is drawn up out of the hole, contributing to mushrooming. While known commercial fasteners for composite materials --virtually all of

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<sup>1</sup> As seen in his declaration, Mr. Tipps is the Sales Manager of the assignee of this application, Titan Metal Werks, Inc. (hereinafter "Titan"), and he has many years of experience with fasteners and building materials.

which employ a double-threaded design-- addressed this problem by drawing the remnant back into the hole, applicants looked for a solution in another direction. The design of claim 1, sold commercially as the “SplitStop™ Titan III Composite Screw” (hereinafter “T3”), features, among other things, threads with three lobes/facets, a circular, undercut head, and a plurality of spaced rings between the threads and the head. The shaft of the T3 also has three lobes/facets, as would be expected with such threads. The number of threads used on the T3 is increased over the number of threads shown in the drawings, and the diameter of the rings is larger.

Rather than use a double-threaded design, applicants eliminated the set of threads near the head of the fastener and replaced those threads with a plurality of spaced rings. The rings, rather than compress the remnant material back into the hole, allow the remnant material to be drawn out toward the hole entrance where much of it is cut off by the first ring, later to be wiped away. What little remnant is left is captured by the other rings and the undercut head.

This approach not only reduces mushrooming, it addresses installation issues ignored --and in fact exacerbated-- by screws using the double-threaded design.

The invention that is the subject of this application, by eliminating the compression created by double-threaded screws when they draw remnant material back into the composite board, not only eliminates mushrooming, it has added benefits as well. Splitting is reduced, the torque required to drive the screw is reduced, so the screw is easier to drive and its head sets easily in the composite board. These results were unexpected and

apparently unrecognized by the competitive composite screw companies.

The Tipps Declaration shows that the claimed fastener is superior to present and past known commercially available competitive fasteners for composite materials. The torque required for installation, splitting, and mushrooming are all reduced as compared with those known fasteners, and head setting is improved. Despite the increasing need for fasteners that address these problems, only the T3 achieves these superior results.

With little marketing and a relatively unknown name, the SplitStop™ T3 fastener has achieved surprising commercial success. In the 1 1/2 years since it has been on the market, the T3 has been recognized throughout the industry as a superior fastener for composite decking and railing material, and is being promoted or specifically recommended by manufacturers estimated to drive over twenty percent (20%) of the sales of such material. As a consequence, the T3 has already achieved about a three percent (3%) market share, and is growing.

Almost all fasteners today are a combination of known features, yet superior fasteners continue to be made by inventing novel and non-obvious combinations of those features. Given the crowded art in this field, objective evidence such as that presented here is particularly helpful. Applicants appreciate the examiner's consideration in this regard.

For all of the foregoing reasons, Applicant submits that this Application, including claims 1-3, 5-6, and 7-9, is in condition for allowance, which is respectfully requested. The Examiner should contact the undersigned attorney if a further interview would expedite prosecution.

Respectfully submitted,

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